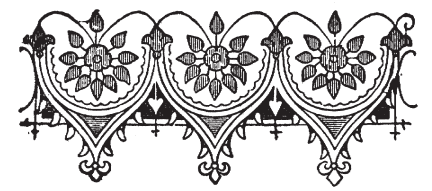


Health & Wellness



We are a Nation of Nutritional Inadequates



Dr. Kate Thomsen and Silky

“People are fed by the food industry which pays no attention to health and are treated by the health industry that pays no attention to food.”

—Wendell Berry

We are what we eat but....

For optimal health we need to give our bodies adequate macro and micronutrients. With our extensive knowledge of nutrition and biochemistry, combined with agribusiness and food conglomerates – this should be a piece of cake (pun intended). Our accumulating knowledge of nutrition and how it affects health and disease initially led to food fortification, a very successful public health intervention. The earliest nutritional intervention to prevent disease was the 1750s addition of citrus fruits to the diets of British sailors. This was done to prevent scurvy which occurred after prolonged (months) absence of dietary Vitamin C. In the US, food fortification has almost completely eliminated goiter, rickets, beriberi and pellagra. The United States iodized salt in the 1920s to prevent thyroid goiter. An enlarged thyroid, called goiter, was endemic in the American Midwest where sources of iodine were scarce. We prevented rickets (soft, poorly calcified bones in children) with Vitamin D. This was first accomplished by recommending cod liver oil, then by recommending milk with added cod liver oil, next by irradiating milk (which converted inactive to active Vitamin D) and finally, in 1932 by fortifying milk with the newly synthesized Vitamin D product, viosterol. In the early 1900s deficiencies of B Vitamins were highly prevalent in the US. In 1928 there were ~ 7,000 deaths due to pellagra (dermatitis, diarrhea, dementia due to Vitamin B3/niacin deficiency). In the late 1800s Beri-

beri, a deficiency of Vitamin B1/thiamin was found to be related to eating primarily polished rice (without the rice bran containing thiamin). Beriberi caused symptoms of heart and nervous system disease. In the US, thiamin deficiency was noted in the diets of Southern whites (but not in blacks who ate whole corn meal and pork). Slowly grain mills started to add B vitamins to flour, influenced by nutritional recommendations for the war effort and widely accepted by 1942. “Enriched flour” is flour that has added back the specific nutrients lost during processing – iron and the B vitamins folic acid, riboflavin, niacin and thiamin.

So... have we now eliminated nutrient deficiencies? Mostly. But now we have an epidemic of nutritional inadequacies. This occurs when the level of micronutrient intake is above the level associated with deficiency but below dietary recommendations. Micronutrient inadequacies do not cause severe symptoms and death in a short period of time like nutrient deficiencies. Rather inadequacies may cause vague symptoms that are difficult to evaluate clinically such as fatigue, impaired cognitive function, and decreased immunity. Over the long term, micronutrient inadequacies increase the risk of chronic diseases like cardiovascular disease, diabetes, osteoporosis, age-related eye diseases, and cancer. NHANES 2007 – 2010 (a US nation-wide nutritional study) reports that 94% of the US population did not meet the daily requirement for Vitamin D, 88% for Vitamin E, 52% for magnesium, 44% for calcium, 43% for Vitamin A and 39% for Vitamin C. Adequate intake levels were low in 100% of the population for potassium, in 67% of the population for Vitamin K and 92% of the population for choline. Inadequacies of B vitamins and many minerals were present but less severe. The 2015 Dietary Guidelines for Americans cited the underconsumption of Vitamin D, calcium, potassium, fiber and iron as a public health concern because of their association with diseases such as osteoporosis, cardiovascular disease, colon health and anemia. The Guidelines also reported underconsumption of magnesium, choline and vitamins A, C and E. How

can this be when the average American consumes about 3,600 calories per day???? (The average woman needs only 2000 and the average man 2500 per day.) It appears to be due to the Standard American Diet (SAD) consisting of nutrient depleted, ultra-processed foods including refined flours and industrial seed oils. The 2015 Guidelines report that over 80% of the US population do not consume the recommended intake of vegetables and more than 75% do not consume the recommended intake of fruit. Intake of whole grains and dairy are also below recommended amounts. What the average American is consuming is excess sodium (found in more than 97% of the population) and high calorie, nutrient poor foods (eg soda, refined carbohydrates) comprising approximately 30% of daily calorie intake as well as alcohol contributing to 4% of the daily caloric intake.

From the 2015 Dietary Guidelines for Americans: “Our report highlights the major diet-related health problems we face as a Nation and must reverse. About half of all American adults – 117 million individuals - have one or more preventable chronic diseases that relate to poor quality dietary patterns and physical inactivity, including cardiovascular diseases, hypertension, type 2 diabetes, and diet-related cancers. More than two-thirds of adults and nearly one-third of children and youth are overweight or obese. These devastating health problems have persisted for decades, strained U.S. health care costs, and focused the attention of our health care system on disease treatment rather than prevention. They call for bold action and sound, innovative solutions.”


Agribusiness and the giant food conglomerates will sell us anything – including food laced with toxins and foods depleted in nutrients. Hopefully we are smart enough to buy organic, nutrient-dense foods from the perimeter of the supermarket and at our local farmers markets. That goes a long way towards ensuring nutritional adequacy but it doesn’t take into consideration individualized needs. Nutritional inadequacies are still possible depending on a number of individualized factors such as: specific diets (gluten free,

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Some Common Medications that can Interfere with your Dietary Intake of Nutrients

If you take any medications, you may need to increase certain nutrients in your foods to obtain nutritional adequacy. With any medication, it is important to look at the package insert that comes with your medication. Read the Warnings and Precautions section at the top and the Patient Information at the end to see if there is any advice about nutrient interference. Before using nutritional supplements, always check with your doctor as Drug-Nutrient Interactions can occur both ways (some drugs interfere with nutrients, some nutrients interfere with drugs).

- Statins (cholesterol lowering drugs) decrease CoQ10 and possibly the fat soluble Vitamins A,C,E,K
- Antacids: H2 Antagonists deplete calcium, folic acid, iron, Vitamin B12 and Vitamin D; Proton Pump inhibitors deplete magnesium and Vitamin B12
- Antidepressants (SSRIs) – deplete Vitamin B9/folate
- Oral Contraceptive pills - deplete levels of B vitamins (B2/riboflavin, B6/pyridoxine, B12, B9/folate) Vitamin C, magnesium and zinc; elevates levels of Vitamin K, copper, iron
- Hormone Replacement Therapy - depletes Vitamin B9/folate, Vitamin B6/pyridoxine, Vitamin B12, and magnesium
- Antibiotics - deplete calcium, magnesium, potassium as well as certain B vitamins (B1/thiamin, B2/ riboflavin, B3/niacin, B5/pantothenic acid, B6/pyridoxine, B9/folate, Vitamin B12) and Vitamin K.
- Oral hypoglycemic drugs for diabetes – deplete Vitamin B12 and Vitamin B9/folate
- Diuretic Drugs (“water pills”): loop diuretics and thiazides – deplete magnesium, potassium and zinc; Potassium sparing drugs deplete Vitamin B9/folate
- Anxiety medications (benzodiazepines) – deplete calcium
- Antihypertensive drugs (to treat high blood pressure): ACE inhibitors deplete zinc; calcium channel blockers deplete potassium; beta-blockers can deplete CoQ10
- Corticosteroids (steroids) – deplete calcium, magnesium, potassium, sodium, protein, Vitamin C, and Vitamin D
- Digoxin - depletes calcium, magnesium, phosphorous, potassium, Vitamin B1/thiamin



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Additional articles on holistic health topics can be found on the website

ketogenic, vegan, inflammatory/conventional/SAD, food choices and food combining....), medications (see Side Bar), lifestyle (alcohol, exposure to sunlight, excess exercise, high stress, methods of cooking, type of salt used....), socioeconomic status (affordability, accessibility, exposure to toxins), current health conditions (pregnancy, menstrual flow, diarrhea, gastrointestinal disorders, kidney disorders, diabetes, acute illness recovery, cancer, infections, aged/elderly, food allergies/intolerances....), genetic variations (MTHFR and other methylating genes, BCM01, detoxifying genes....), Accumulated toxins (glyphosate, heavy metals, conventional foods contaminated with pesti-

cides and herbicides...) The next article, Sept/Oct, will review these individualized risk factors for nutritional inadequacy, testing for micronutrient status, and tips for increasing nutritional adequacy.

Dr. Kate Thomsen's office for holistic health care is located in Pennington, NJ. She is trained in Family Medicine, is Board Certified in Integrative Medicine, and is an Institute for Functional Medicine Certified Practitioner. She has been practicing Functional Medicine for 20 years. For more information see www.drkatethomsen.com or call the office at 609-818-9700.